

CLAIMS

We claim:

1. A method for identifying a second device on a second node of a standard communications network from a first device located on a first node of the standard communications network, comprising the steps of:
  - initiating from the first node a first communications command in a peer protocol format to the second node;
  - initiating from the second node a second communications command in the peer protocol format to the first node;
  - identifying the second device on the second node as a peer device within the first device on the first node; and,
  - identifying the first device on the first node as a peer device within the second device on the second node.
2. The method of claim 1 wherein the peer protocol format is a programmable logic controller (PLC) format.
3. The method of claim 1 wherein the peer device is a programmable logic controller (PLC) device.
4. The method of claim 1 wherein the peer protocol format is Modbus.
5. The method of claim 1 wherein the standard communications network is Ethernet.
6. The method of claim 1 further comprising the step of:

after initiating from the first node a first communications command in a peer protocol format to the second node, responding to the first communications command from the second node to the first node.

5           7.     The method of claim 1 further comprising the step of:

after initiating from the second node the second communications command in the peer protocol format to the first node, responding to the second communications command from the first node to the second node.

10           8.     The method of claim 1 further comprising the steps of:

setting the first node to an active status; and,  
setting the second node to a passive status.

15           9.     A device scanner for a first device located on a first node of a standard communications network, for scanning devices on the standard communications network, and for identifying a second device on a second node of the standard communications network, comprising:

an initiator for initiating a first communications command in a peer protocol format to the second node;

20           a receptor for receiving from the second node a second communications command in the peer protocol format, in response to the first communications command; and,

an identifier for identifying the second device on the second node as a peer device.

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10.     The device scanner of claim 9 further comprising a scan table for storing parameters relating to the devices, the scanner using one or more of the parameters for scanning the devices.

11. The device scanner of claim 9 wherein the second device identifies the first device on the first node as a peer device.

12. The device scanner of claim 9 wherein the peer protocol format is a programmable logic controller (PLC) format.

13. The device scanner of claim 9 wherein the peer device is a programmable logic controller (PLC) device.

14. The device scanner of claim 9 wherein the peer protocol format is Modbus.

15. The device scanner of claim 9 wherein the standard communications network is Ethernet.

16. The device scanner of claim 9 wherein after the device scanner initiates the first communications command, the second node responds to the first communications command to the first node.

17. The device scanner of claim 9 wherein the after the second communications command is received by the first node, the device scanner responds to the second communications command to the second node.

18. The device scanner of claim 9 wherein after the second device on the second node is identified as a peer device, the first node is set to an active status, and the second node is set to a passive status.

19. An apparatus for communication with at least one device which resides on a standard communications network using a standard communications protocol, comprising:

a scanner for scanning the devices;

5 a device scan table for storing data relating to the devices, the scanner using the data in the device scan table relating to the device to scan the device;

a standard communications interface for interfacing between the scanner and the device on the standard communication network using the standard communication protocol; and,

10 a scan parameter indicating the application of the scan.

20. The apparatus of Claim 19 wherein the scan parameter indicates a number of devices to be scanned by the device scanner.

15 21. The apparatus of Claim 19 wherein the scan parameter indicates a device type.

22. The apparatus of Claim 19 wherein the scan parameter indicates a location for storing and retrieving data for the devices.

20 23. The apparatus of Claim 22 wherein the scan parameter indicates a length of the stored data and the retrieved data.

24. The apparatus of Claim 19 wherein the standard communications network  
25 is an Ethernet network.

25. The apparatus of Claim 19 wherein the standard communications network is TCP.

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26. The apparatus of Claim 19 wherein the programmable logic controller (PLC) communication protocol is communicated over the standard communications protocol.

5 27. The apparatus of Claim 19 wherein the standard communications network provides communication between the device scanner and the devices.

28. An apparatus for monitoring and controlling input and output devices which reside on a standard communications network using a standard communications protocol, comprising:

a scanner for scanning input and output devices;

an input/output (I/O) scan table for storing input and output data relating to the input and output devices;

10 a standard communications interface for interfacing between the I/O scanner and the device on the standard communication network using the standard communication protocol; and,

an I/O scan parameter indicating the application of the scan.

29. The apparatus of Claim 28 wherein the I/O scan parameter indicates a number of devices to be scanned by the I/O scanner.

30. The apparatus of Claim 28 wherein the scan parameter indicates a whether each device is an input device, an output device, or an input and output device.

25 31. The apparatus of Claim 28 wherein the scan parameter indicates a location for storing data from the input devices.

32. The apparatus of Claim 31 wherein the scan parameter indicates a length of the stored data of the input devices.

5 33. The apparatus of Claim 28 wherein the scan parameter indicates a location for retrieving data for the output devices.

34. The apparatus of Claim 33 wherein the scan parameter indicates a length of the retrieved data of the output devices.

10 35. The apparatus of Claim 28 wherein the standard communications network is an Ethernet network.

36. The apparatus of Claim 28 wherein the standard communications network is TCP.

15 37. The apparatus of Claim 28 wherein the programmable logic controller (PLC) communication protocol is communicated over the standard communications protocol.

20 38. The apparatus of Claim 28 wherein the standard communications network provides communication between the device scanner and the devices.

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